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Purchasing's interaction with customers: The effects on customer satisfaction--a case study

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ABSTRACT: An examination is made of the experiences of a purchasing organization, in one division of an oil company, that had tried unsuccessfully for 10 years to improve customer satisfaction by measuring performance and improving supplier reliability. Management then employed a somewhat broader approach to improving purchasing performance in the area of capital equipment purchases: interacting more closely with internal customers. To evaluate the effects of this approach on customer satisfaction, upper- and middle-level managers in purchasing's 2 largest internal customer organizations, Engineering and Maintenance, were surveyed - first in the Northern Division, where both past efforts and the current intervention had been implemented, and in a similar division, the Southern Division, where only past efforts had been applied. The results indicate that interacting more closely with customers can improve customer perceptions of purchasing's responsiveness and professionalism, but that technical knowledge may play a greater role in improving perceptions of the value added by purchasing. The experiences of this purchasing organization provide general insights on approaches to perceived performance improvement.

TEXT: A significant number of purchasing organizations find themselves working to improve both their image and customer satisfaction. This article describes the experiences of a purchasing organization, in one division of an oil company, that had tried unsuccessfully for ten years to improve customer satisfaction by measuring performance and improving supplier reliability. Management then employed a somewhat broader approach to improving purchasing performance in the area of capital equipment purchases: interacting more closely with internal customers.

To evaluate the effects of this approach on customer satisfaction, upper- and middle-level managers in purchasing's two largest internal customer organizations, Engineering and Maintenance, were surveyed--first in the Northern Division, where both past efforts and the current intervention had been implemented, and in a similar division, the Southern Division, where only past efforts had been applied. The results indicate that interacting more closely with customers can improve customer perceptions of purchasing's responsiveness and professionalism, but that technical knowledge may play a greater role in improving perceptions of the value added by purchasing. The experiences of this purchasing organization

provide general insights on approaches to perceived performance improvement.

While changes are occurring in many companies with respect to the strategic use of the purchasing function, and an increasing number of published articles discuss the concept of purchasing's strategic role, (1) a significant number of purchasing organizations find themselves working in a much different reality. These organizations are trying to achieve a less lofty goal: how to improve both their image and customer satisfaction. Such purchasing groups face limited, if any, involvement and influence in strategic, operational, or project planning, because their internal customers consider them to be a simple, clerically oriented function that adds no value--and often causes delays. Nonetheless, in order for these purchasing organizations to play a more strategic and important role, they most likely need to change this perception. Unfortunately, the purchasing literature provides relatively few accounts of a customer-based improvement approach. (2)

This article describes how purchasing management in one division of an oil company moved from a passive, supplier-based improvement approach to a more active, customer-based approach (see Figure 1). (Figure 1 omitted) The division's purchasing organization handles approximately 50,000 purchase orders annually, with a value equal to 40 percent of the company's total operating budget. Since 1982 purchasing management has implemented programs designed to improve customer satisfaction. First, this article describes these past improvement efforts and their results, along with the current improvement effort. Next, the current improvement effort's effects on purchasing image and customer satisfaction are assessed. Finally, insights based on past and current efforts are discussed.

WHAT HAD BEEN DONE--AND WHAT IS BEING DONE

Past efforts to improve customer satisfaction with purchasing suggested that improvement efforts must consider customer needs and expectations--and should be targeted at the purchasing subprocess level (capital equipment purchasing; blanket order purchasing; high value, noncapital equipment purchasing; and low value material purchasing), because each subprocess has different procedures, customers, and customer expectations. This information is summarized in Table I. (Table I omitted)

In 1992 purchasing management decided to improve the capital equipment purchasing subprocess because delays in capital equipment purchases were affecting division production and profits, and because a new company policy stated that surplus purchasing budget monies could not be carried forward from one year to the next. For these reasons, the division manager had a special interest in the situation and requested that the purchasing manager form a cross-functional team to study the process. The nine-person team included the purchasing manager and the top manager from each of the functional organizations that purchasing serves. The division manager expected monthly progress reports until the team implemented its solutions.

The team first flowcharted the capital equipment purchasing process and then brainstormed reasons for delays. Although both parties--purchasing and its customers--blamed one another in private for the delays, in public the team members blamed a politically neutral, generalized "other"--the supplier. To investigate this hypothesis, a sample of 500 closed purchase orders were analyzed for on time delivery performance. The analysis revealed the same situation that was found in 1985 (see Table I)--suppliers were reliable, but the supplier's promised delivery date differed from the customer's required date shown on the purchase requisition. Rather than pointing to a supplier problem, the analysis pointed to a long-term,

chronic communication problem between purchasing and its customers. Purchasing's customers were planning start dates for projects, programming equipment replacements, and scheduling preventive maintenance on the assumption that the needed materials would arrive by the date requested. The buyers, on the other hand, seldom compared the customer required date with the supplier promised date, and did not communicate with the customer when the two dates differed.

The following solutions were implemented in June, 1992:

1. Purchasing would participate in project planning for any project requiring materials, and customers would contact purchasing about material leadtimes before preparing a purchase requisition.
2. Purchasing would notify customers about any discrepancy between the customer required date and the supplier promised date, and customers would adjust their operational plans according to the promised date.
3. Purchasing would prepare and distribute a monthly report on the status of all capital equipment purchase orders, by customer. Changes in and deviations from customer required dates would be documented.
4. The cross-functional team would meet quarterly with the division manager to monitor capital equipment purchasing budget compliance and performance.

To monitor the effects of the proposed changes, purchasing redefined on-time material delivery performance and began tracking it and capital equipment budget compliance. On-time material delivery was defined as the percent of time capital equipment arrived by the customer required date. Capital equipment budget compliance was defined as the difference between the money allocated per month for capital equipment purchases and the money actually spent. Two years have passed since these changes were implemented, and the purchasing manager thought it was time to measure results from the customer's point of view.

HOW THE CURRENT EFFORT'S EFFECTIVENESS WAS ASSESSED

Upper- and middle-level managers in purchasing's two largest internal customer organizations, Engineering and Maintenance, were surveyed in the Northern Division--where both past efforts and the current effort had been implemented--and in a similar division, the Southern Division, where only past efforts had been applied. (Prior to this study, formal customer satisfaction data had not been collected in either division). The survey was mailed to 20 engineering and maintenance managers in both the Northern Division and Southern Division respectively; of the approximately 100 upper- and middle-level managers in each division, the 20 managers surveyed in each division were selected based on their level of involvement with capital equipment purchases. A week after sending the survey, an electronic mail reminder was sent. On the date the surveys were due, managers were phoned and reminded.

Survey questions were based on a 1993 survey performed by a U.S. oil company's procurement department and on research performed by Hendrick and Ruch(3) to determine performance appraisal criteria for buyers. The questions highlighted seven main areas for customer-oriented purchasing performance:

1. Service
2. Accuracy
3. Communication

4. Responsiveness

5. Professionalism

6. Technical knowledge

7. Customer concerns

Survey questions were reviewed for validity by the Northern Division purchasing manager, two purchasing supervisors, and a senior buyer.

The Appendix includes the 18 closed-end and four open-end questions asked in the survey. The closed-end questions were rated on a four-point scale: 1) always; 2) most of the time; 3) sometimes; and 4) never. A four-point scale was selected to force the participants to lean in one direction or the other (satisfaction versus dissatisfaction).

Because categorical survey data were collected, question responses were dichotomized rather than weighted and averaged. One category included the percent of managers who tended to be satisfied (always, most of the time); the other included the percentage tending to be dissatisfied (sometimes, never). A simple average percentage figure was calculated for each main area of inquiry (e.g., service, accuracy, communication).

The following null hypothesis, H_0 , was tested in each division against the research hypothesis for that division, H_n and H_s :

H_0 : As many division customers are satisfied with the capital equipment purchasing process as are dissatisfied with it.

H_n : More Northern Division customers are satisfied with the capital equipment purchasing process than are dissatisfied with it (i.e., the proportion of satisfied customers is greater than 50 percent)

H_s : More Southern Division customers are dissatisfied with the capital equipment purchasing process than are satisfied with it (i.e., the proportion of dissatisfied customers is greater than 50 percent).

The statistical test employed was the binomial, and a significance level of 0.05 was specified. A statistical test that directly compared customer satisfaction in the two divisions could not be used. Therefore, by inference, in cases where the null hypothesis was rejected in one division but not in the other, the claim was made that customer satisfaction in the one division was greater or less than customer satisfaction in the other division.

The two indicators tracked by purchasing management--on time material delivery and capital equipment budget compliance--could not be used in the analysis. The indicators show a change, but without a context in which to evaluate this change, no conclusion could be drawn. (Historical data regarding material delivery times were based on a different definition of on-time delivery and include other purchasing subprocesses.)

MAJOR FINDINGS OF THE STUDY -- A MIXED BAG

Fifteen completed surveys were returned in the Northern Division for a 75 percent response rate; 12 were returned in the Southern Division for a 60 percent response rate. Because no other demographic data were collected, and because no coding scheme was used, nonrespondents could not be

identified and no additional follow-up to increase the response rate could be done.

Table II shows, by survey question and main area of inquiry, the proportion of managers tending toward satisfaction in the Northern and Southern Divisions, along with the statistical test results. The reader should view these results with an informed skepticism because no data were collected to assess the degree to which nonrespondents' views may have differed from those of respondents. (Table II omitted) In addition, because purposeful rather than random sampling was employed, the results and interpretations discussed below are valid for the sample of managers who responded to the survey, but may not necessarily hold true when generalized to each division's upper- and middle-level management population.

Table II highlights four interesting results. First, a more positive customer relationship with purchasing exists in the Northern Division than in the Southern Division. Although not every area proved statistically significant, the Northern Division managers who responded to the survey rated purchasing performance higher than their Southern counterparts, regardless of the area surveyed. In addition, the fact that more Northern Division managers (7 percent) chose to respond to the survey than did Southern Division managers (60 percent) suggests a better overall relationship with purchasing in the Northern Division. The nonrespondents in both divisions may have been experiencing "survey burnout," or they simply may not have considered it important enough given their other work tasks, or they did not feel any action would be taken on the results--or perhaps all three. Regardless of the reason, fewer nonrespondents were found in the Northern Division. For those who did respond to the present survey--and for those who did not--the quality of interaction during the upcoming year with purchasing and the new initiatives may determine whether or not they respond to next year's survey.

Second, when compared with the Southern Division, the current effort appears to have succeeded in improving purchasing's performance in the areas of responsiveness and professionalism, but not in the area of overall service. In other words, from a customer's viewpoint, purchasing still performs a non-value added function, but performs that non-value added function in a responsive, professional manner! These customers' perceptions of value added may be influenced more by purchasing's technical knowledge than by the other causes and correlates of purchasing image typically emphasized in the literature.' Keep in mind the fact that the current improvement effort only changed procedures within the capital equipment purchasing process; it left untouched purchasing personnel's level of technical knowledge and expertise (a point to which we return later). Customers who do not trust purchasing's technical competence are perhaps more likely to consider purchasing a clerical function and to continue to bypass purchasing and deal directly with suppliers, regardless of what company policies and procedures state they should do.

In addition to leaving purchasing's technical knowledge unaltered, the current effort left untouched the other three purchasing subprocesses. Poor performance in those areas could create biased perceptions of value added in the capital equipment area. Although customers were asked to respond to the survey based on their capital equipment purchase experience, it may have been impossible for them to do so; customer experiences tend to resemble a ball of wax more than they do single threads of cloth.

Third, the involvement of purchasing in project planning appears to have improved customers' understanding of purchasing procedures, which in turn improved both overall communication and timeliness in obtaining needed items. However, the communication links between purchasing and its

customers outside of formal planning appear weak. Many managers still do not receive explanations for delays and still prepare purchase orders without first consulting purchasing (which then makes it difficult for buyers to provide timely, reasonable explanations for delays). Responses to the open-end survey questions provided a partial explanation for this lack of communication: buyers do not have access to electronic mail. The Northern Division purchasing manager has since authorized electronic mail access for all buyers. In addition, three-day seminars about purchasing policies and legal procedures will be offered every three months.

While electronic mail access for buyers should improve communication with customers, the communication process remains complicated by a company policy that freezes the capital equipment budget six months into the fiscal year, thereby providing a disincentive for purchasing and its customers to communicate. If suppliers' promised dates or customers' required dates change in the last six months of the fiscal year, the capital budget remains unchanged. Old patterns of behavior prove difficult to alter, especially when company budget practices run counter to the desired change.

The final major finding of the study is extremely important. The current improvement effort appears not to have significantly altered perceptions among operating managers that purchasing fails to fully understand its customers' needs. This finding relates directly to customer satisfaction, or lack of it, with purchasing's technical knowledge: Does purchasing have sufficient understanding of the work its customers perform? Does it maintain adequate technical knowledge with respect to customer requirements? Customer perceptions of and satisfaction with purchasing's technical knowledge probably will prove to be the most difficult area to improve. More often than not, the customers consider themselves to be the experts on the material and equipment they use. The buyers, on the other hand, are usually younger, lower seniority people with business degrees, limited practical purchasing experience, and little technical experience. With a few exceptions, purchasing has no experts on operating materials or equipment.

Given the reliance on and the increasing complexity of technology, improving buyers' technical skills through training or job rotation in operating areas appears to be essential. This is especially important if the purchasing organization plans to take on a more strategic role.

WHAT CAN PURCHASING MANAGERS LEARN FROM THIS FIRM'S EXPERIENCE?

The experiences of this purchasing organization provide four general insights on purchasing performance improvement that may be useful to purchasing managers in other organizations.

1. What can be observed in this purchasing organization's past and present efforts is a continued attempt to improve its performance by moving farther upstream in the acquisition process. Its initial efforts focused on suppliers; its present and somewhat more successful effort focuses on closer customer interaction and mutual understanding. Although past efforts did not always produce the hoped-for results, they appear to have succeeded in providing a knowledge base and foundation on which each subsequent effort could be designed and implemented. For example, the current effort has identified a need to improve purchasing personnel's technical knowledge. And because the current effort has also provided an opportunity and a context for purchasing to work more closely with its customers, purchasing management should be better able to target the specific training needed--and buyers should perceive a legitimate need and application for that training.

Improving purchasing performance--much like improving other functional areas and processes--may require nothing more than a continued series of experiments. And these experiments must be designed to accomplish two objectives: (1) to make improvement and (2) to enhance knowledge of the system managed--knowledge needed in order to better design the next subsequent experiment and increase its probability of success.

2. Another key observation from this organization's improvement efforts is that every improvement strategy attempted over the past ten years or so was implemented. Perhaps this would have not been the case had each subsequent effort been a giant leap rather than a small step when compared with the previous effort. This suggests that the more compatible the proposed change is with a purchasing organization's past history, existing culture, and present circumstances, the greater is the probability of effective implementation and change.

3. The evolution of this purchasing organization's improvement efforts happened unintentionally. That it was consistent in its theme was probably due more to good fortune than good management--no overall improvement strategy or plan or process drove it. Not every purchasing organization will find itself this lucky. In the absence of a long-term improvement plan, the experimentation prescribed above might prove counterproductive, resembling more of a random walk than thoughtful process. Participative, performance improvement planning processes that link improvement objectives to action should prove itself here.

4. The final observation is this: Efforts intended to make this purchasing organization more effective tended to be, paradoxically, inefficient. While the actual change processes followed by this purchasing organization were not described in this article, suffice to say that any linear, step-by-step model of those processes would have been a gross oversimplification. This purchasing organization faced its own unique blend of personalities and politics as it attempted to make change. That unique blend made for unique implementation challenges. Take these same efforts in a different context and it may very well be a different story with a different ending. Take a purchasing subprocess other than capital equipment purchasing (e.g., blanket order purchasing; high-value, noncapital equipment purchasing; or low-value material purchasing) in this same context, and different implementation strategies will most likely be required. Therefore, while one purchasing organization can learn from another in terms of what was done, how change should be implemented--and the results that can be expected from that change--are a different matter altogether.

APPENDIX--SURVEY QUESTIONS(*)

A. Service

1. The purchasing function adds value to my purchasing transactions.
2. The purchasing function helps keep my department's cost down.
3. The purchasing function helps my department comply with its capital purchasing budget.

B. Accuracy

4. The purchasing function obtains the items I ordered.
5. The purchasing function obtains the items I ordered when I need them.

6. The purchasing function correctly understands my needs.

C. Communication

7. The purchasing function provides reasonable/timely explanations when delays occur.

8. Procedures for requesting purchasing services are easily understood.

9. I contact the purchasing function to obtain information about material leadtimes before preparing the purchase requisition.

D. Responsiveness

10. The purchasing function is actively involved in my department's programs/projects.

11. Qualified purchasing professionals are available to discuss issues.

12. Qualified purchasing professionals are available to answer questions.

E. Professionalism

13. The purchasing function portrays a quality image.

14. The purchasing function portrays a positive attitude.

F. Technical knowledge/expertise

15. The purchasing function has sufficient understanding of the work of my organization to provide high-quality service.

16. The purchasing function maintains technical knowledge of the products and/or services they provide.

17. The purchasing function maintains expertise in the company's purchasing procedures.

18. The purchasing function maintains expertise in purchasing's legal procedures.

G. Customer concerns

19. Are you satisfied with the capital equipment purchasing process? If not, please explain the reasons.

20. In what areas does the purchasing function need to improve?

21. What additional services should the purchasing function provide?

22. What changes would you recommend?

* The subhead titles for items A through G did not appear on the survey administered to Managers. They are shown here to help the reader map questions to areas. The order in which the questions were asked remains unchanged.

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